TO: HONORABLE HANK COE
HONORABLE MATT TEETERS

FROM: Flint Waters, State Chief Information Officer

SUBJECT: P20 Statewide Longitudinal Data System Assessment

DATE: October 24, 2013

CC: Tony Young, Deputy Chief of Staff, Office of the Governor

EXECUTIVE SUMMARY

At the request of the chairmen of the Joint Education Committee (JEC), the Department of Enterprise Technology Services (ETS) is providing an update on the progress of the P20 Statewide Longitudinal Data System (SLDS) and associated 2012 Needs Assessment.

> *"A description of major findings of the SLDS needs assessment which was reported at the July 15-16 JEC meeting, as undertaken by ETS through the P20 SLDS task force; what specific steps ETS and the task force have undertaken to address the needs assessment; and an update on the establishment of a data governance structure including specific progress and timelines under data sharing agreements defining each agency's contribution to the SLDS."*

2012 Budget Bill Section 326. Education Accountability Data Systems
Maintaining and supporting efforts for the Wyoming P-20 Statewide Education Longitudinal Data System

- A Needs Assessment for the P20 SLDS was completed and provided to JEC in December 2012. This information is being used to inform the ETS FY 2015-16 Biennium Budget request, data governance program and technical infrastructure.

- The major findings include:
  - Due to limited cross-agency data structures, there is a need to better facilitate analytical capabilities through a secure process for data transmission.
  - There are inconsistencies between vocabulary, terms and definitions of individual record data across agencies.
  - Wyoming should consider best practice examples to minimize risk and costs.
  - A comprehensive governance structure is critical to the success of this effort.
  - A priority for ensuring data privacy is fundamental - "A key role ETS must play is in protecting the data and the needs of the stewards of the data."
  - Many agencies lack the research abilities and resources to make appropriate use of the knowledge a P20 SLDS can deliver.

- The needs assessment produced a total of 20 findings from which 23 recommendations were identified. The P20 SLDS Needs Assessment Recommendations Planning document provides details on how ETS and the P20 SLDS Task Force are addressing the recommendations.

APPENDIX 13

- P20 SLDS Task Force Members include:

  State Agencies, Boards and Commissions

  - Professional Teaching and Standards Board
    - 2010 Original Members: None
    - 2013 Current Members: Andrea Bryant
  - Wyoming Community College Commission
    - 2010 Original Members: Joe McCann
    - 2013 Current Members: Joe McCann, Andy Corbin and Geir Solvang
  - Wyoming Department of Education
    - 2010 Original Members: Laurel Ballard and Meredith Bickell
    - 2013 Current Members: Dianne Bailey, Jed Cicarelli and Leslie Zimmerschied
  - Wyoming Department of Enterprise Technology Services
    - 2010 Original Members: N/A
    - 2013 Current Members: Laurel Ballard (Facilitator)
  - Wyoming Department of Family Services
    - 2010 Original Members: None
    - 2013 Current Members: Jillian Balow and Tony Lewis
  - Wyoming Department of Health
    - 2010 Original Members: None
    - 2013 Current Members: Lisa Peterson and Becky Wight
  - Wyoming Department of Workforce Services
    - 2010 Original Members: None
    - 2013 Current Members: Tom Gallagher, Tony Glover and Sheila Ricely

  Postsecondary

  - Casper College
    - 2010 Original and 2013 Current Members: Lynn Fletcher
  - Central Wyoming College
    - 2010 Original Members: John Wood
    - 2013 Current Members: John Wood and Martha Davies
  - Eastern Wyoming College
    - 2010 Original and 2013 Current Members: Kimberly Russell
  - Laramie County Community College
    - 2010 Original and 2013 Current Members: Chad Marley and Ann Murray
  - Northern Wyoming Community College District
    - 2010 Original and 2013 Current Members: Sharon Elwood
  - Northwest College
    - 2010 Original and 2013 Current Members: Lisa Smith
  - University of Wyoming
    - 2010 Original Members: Daniel Ewert (committee co-chair) and Tammy Aagard (committee co-chair)
    - 2013 Current Members: Jo Chytka, Jennifer Chavez and Cony Pownell
  - Western Wyoming Community College
    - 2010 Original and 2013 Current Members: Jackie Freeze

Wyoming School Districts

- 2010 Original Members:
  - Platte #1 - Dave Barker and Fremont #25 - Craig Beck
- 2013 Current Members:
  - Platte #1 - Dave Barker, Washakie #1 - David Nicholas and Natrona #1 - Drew Walker

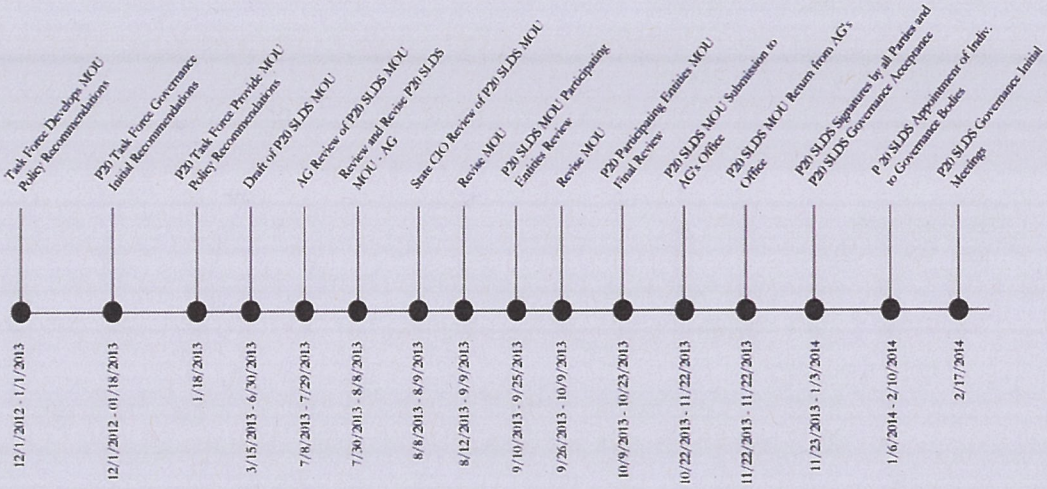
Other Entities

- Head Start
  - 2010 Original Members: None
  - 2013 Current Members: Anita Sullivan
- P-16 Council
  - 2010 Original Members: Rollin Abernathy and Audrey Kleinsasser
  - 2013 Current Members: None (P-16 Council is dissolving)

- Early childhood entities were not included in the Needs Assessment due to time constraints. They now have been identified and are beginning to participate in the P20 SLDS Task Force providing valuable information and feedback for the development of the P20 SLDS solution. These entities include the Department of Family Services, Department of Health, Department of Workforce Services and community Head Start programs.

- There has been a collaborative effort in developing a comprehensive P20 SLDS Memorandum of Understanding (MOU) among the participating entities. The MOU will enable and define the terms for data sharing. The entities involved in the MOU are ETS, the University of Wyoming, Wyoming community colleges, Wyoming Community College Commission, Department of Education, Wyoming school districts, Department of Workforce Services, Department of Family Services, Department of Health and community Head Start programs.

- The data governance structure for the P20 SLDS solution has been recommended by the P20 SLDS Task Force. The recommendation is in alignment with similar State IT and data governance structures shepherded by ETS. The data governance structure has been included in the P20 SLDS MOU. The signing of the P20 SLDS MOU will represent an acceptance and willingness to participate in the P20 SLDS data governance program. The attached project timeline provides additional information on the establishment of the P20 SLDS data governance.


Task Force Develops MOU Policy Recommendations
12/1/2012 - 1/1/2013
P20 Task Force Governance Initial Recommendations
12/1/2012 - 01/18/2013
P20 Task Force Provide MOU Policy Recommendations
1/18/2013
Draft of P20 SLDS MOU
3/15/2013 - 6/30/2013
AG Review of P20 SLDS MOU
7/8/2013 - 7/29/2013
Review and Revise P20 SLDS MOU - AG
7/30/2013 - 8/8/2013
State CIO Review of P20 SLDS MOU
8/8/2013 - 8/9/2013
Revise MOU
8/12/2013 - 9/9/2013
P20 SLDS MOU Participating Entities Review
9/10/2013 - 9/25/2013
Revise MOU
9/26/2013 - 10/9/2013
P20 Participating Entities MOU Final Review
10/9/2013 - 10/23/2013
P20 SLDS MOU Submission to AG's Office
10/22/2013 - 11/22/2013
P20 SLDS MOU Return from AG's Office
11/22/2013 - 11/22/2013
P20 SLDS Signatures by all Parties and P20 SLDS Governance Acceptance
11/23/2013 - 1/3/2014
P 20 SLDS Appointment of Indiv. to Governance Bodies
1/6/2014 - 2/10/2014
P20 SLDS Governance Initial Meetings
2/17/2014

P20 SLDS Needs Assessment Recommendations Planning

Recommendation 1

Proceed to implement the legislated P20 SLDS system for all the reasons the legislature itself has identified: reducing waste; ensuring program effectiveness; producing safe, educated, and productive Wyoming citizens; and using data to drive decisions and policy.

Finding 1: Currently there are limited cross-agency data structures in the learning oriented agencies in the State of Wyoming.

Finding 8: Recent events in education across the nation (beyond Wyoming) have called into focus the need for independent statistical and analytical capabilities that can surface trends or practices that warrant review and, in some cases, legal intervention. This requires both the organizational capacity (e.g., statisticians with time and resources allocated to this task) as well as the independence of governance structures to perform such analysis even when it goes against the political wind of the agencies.

Finding 10: Many educational and state agency cultures do not support a data and policy driven approach to utilizing data. There will need to be a strong training component to the creation of the P20 SLDS system in order to reinforce its proper use across agencies and organizations.

Finding 19: There was a strong desire in various meetings of the Task Force and interviews with stakeholders to make sure that the system includes health, corrections, and family services from the beginning as many of the core questions being asked had to do with correlations and causations between the data sets from these various agencies and organizations. It became clear these were central concerns not peripheral ones. For instance, one of the questions raised by community colleges were the efficacy of some of the social programs that certain cohorts of students had undergone and their possible beneficial impact on student performance. Another question was whether those programs should be promulgated or reduced. Efficient use of State resources became a key concept that need to be addressed by this system and required cross-agency information for many of the questions that were raised.

Plan for Addressing Recommendation 1

The Legislature has begun funding the P20 SLDS.

The P20 SLDS Task Force has outlined high level questions for the P20 SLDS to help answer. A prioritized research agenda will be formulated based on the questions that have already been posed. The research agenda will help prioritize the data to be shared and linked through the P20 SLDS.

Training components will be released as the P20 SLDS is being implemented. This will be addressed in Phases as the P20 SLDS is rolled out.

It became clear in analyzing the stakeholders in the P20 SLDS, that the early childhood component had not been included in the P20 SLDS discussions that have occurred over the last two years. At this point the Department of Family Services, Department of Health, Department of Workforce Services and Head Start programs have been invited to participate in the P20 SLDS, but only to provide their early learning data. Other agencies like Corrections may be included in a broader system at a later date.

An MOU describing how data will be shared through the P20 SLDS has been developed and is being reviewed by each of the P20 SLDS entities before being submitted to the Attorney General's Office for review and signature.

P20 SLDS Needs Assessment Recommendations Planning

Recommendation 2
Use systems already in place and modify them to meet the needs of the P20 SLDS rather than building a system from scratch. The P20 SLDS should be based on a combination of the systems built at WDE, the sharing systems being used by the Postsecondary institutions and the research structures being done by Workforce.

> **Finding 2:** The Wyoming Department of Education (WDE) has an enterprise-class data and information system that already has some cross-agency hooks and connections. Part of the development effort of the new system would be to expand the scope of the system to go beyond WDE's current scope and resourcing to include the whole breadth of the State's needs.
>
> **Finding 4:** A critical issue that was raised is the need for a secure process for the transmission of data and for ensuring data privacy, e.g., who can access the data, how is it transmitted, and at what level of granularity can the data be accessed. This will be one of the fundamental focuses of the design of the system. A key role of ETS is protecting the data and the needs of the stewards of the data.
>
> **Finding 16:** Many agencies using data do not have dedicated research capabilities and may only use the ID matching, the descriptive analytics, and published reports from the system. In some cases, these agencies provide the most compelling argument for the P20 SLDS. The question becomes how a structure is put into place to encourage good research (peer review, etc.), so that people do not draw incorrect and inappropriate conclusions based on the data.
>
> **Plan for Addressing Recommendation 2**
> The P20 SLDS Task Force has discussed this possibility. The WDE is currently assessing their own data and technical systems, much of which has been in production for almost ten years. There may be a need to upgrade or significantly modify their systems.
>
> The security design for the system is being addressed in Phase I of the implementation of the P20 SLDS. The security framework is being addressed in the P20 SLDS RFP.
>
> P20 SLDS Task Force members, including ETS, are supporting an effort led by the Department of Workforce Services in developing sustainable use of the P20 system which includes developing for knowledge in the education field about how to conduct high quality research.

Recommendation 3
Use resources already familiar with the Wyoming cross-agency and education data context to create the P20 SLDS, so as to reduce time to effective engagement.

> **Finding 2:** The Wyoming Department of Education (WDE) has an enterprise-class data and information system that already has some cross-agency hooks and connections. Part of the development effort of the new system would be to expand the scope of the system to go beyond WDE's current scope and resourcing to include the whole breadth of the State's needs.
>
> **Finding 6:** There is no consistency between state agencies in the vocabulary and terms used to describe educational data. Terms like "discipline" and "retention" are used very differently between the Postsecondary and K12 environments.
>
> **Finding 13:** As long as risks are managed, a P20 SLDS can be constructed for Wyoming with a mitigated

impact or investment. Because of the efforts that have already been completed in Wyoming, this work can be done at a more moderate cost scale than would otherwise be possible. Longitudinal data systems are being developed in many states as future-looking legislatures across the country are seeing and addressing this need. There is a wealth of best practice information and forums for sharing intellectual property that Wyoming can utilize to minimize costs and risks.

Finding 18: A great deal of manual work is being done by workforce services in the context of nationwide or workforce development specific initiatives like Workforce Data Quality Initiative. Standing up an SLDS will let us capitalize on what other states are learning.

Plan for Addressing Recommendation 3
The P20 SLDS is being built using known best practices and data and information sharing standards.

Staff already familiar with the P20 SLDS project and needs are being utilized across the entities participating in the effort.

Recommendation 4
In order for the SLDS to provide meaningful results it will require the definitions and meanings of terms to be aligned and documented across all the participating agencies as much as possible. A data dictionary and glossary of terms is an essential tool to facilitate this process.

Finding 6: There is no consistency between State agencies in the vocabulary and terms used to describe educational data. Terms like "discipline" and "retention" are used very differently between the Postsecondary and K12 environments.

Finding 7: The questions in Appendix C of the P20 SLDS Needs Assessment call for governance structures that are empowered to help set policy, define important constructs and terms (such as what is an effective teacher, student success, post-secondary readiness), require additional data to be collected (e.g., cohort data, post-secondary data from higher education institutions beyond Wyoming) and establish data standards that are used across the State agencies. See Appendix B for the initial proposed governance structure.

Plan for Addressing Recommendation 4
A data dictionary to provide consistency in vocabulary, term and data definitions between P20 SLDS entities is included in the P20 SLDS RFP.

The plan for the P20 SLDS data governance structures is being vetted with the P20 SLDS participating entities at this time. The data governance structure is being defined and approved through the signing of the P20 SLDS MOU by each entity. While the data governance structure is still being put into place, the P20 SLDS Task Force has been filling that role. The Task Force includes representation of the entities participating in the data governance structure.

Recommendation 5
Emphasize a thorough training and education plan so as to have a broad base of stakeholders who can manage, train, and support others in using the system thus reducing the risk of personnel changes.

Finding 4: A critical issue that was raised is the need for a secure process for the transmission of data and for ensuring data privacy, e.g., who can access the data, how is it transmitted, and at what level of granularity can the data be accessed. This will be one of the fundamental focuses of the design of the system. A key role ETS

must play is in protecting the data and the needs of the stewards of the data.

Finding 7: The questions in Appendix C of the P20 SLDS Needs Assessment call for governance structures that are empowered to help set policy, define important constructs and terms (such as what is an effective teacher, student success, post-secondary readiness), require additional data to be collected (e.g., cohort data, post-secondary data from higher education institutions beyond Wyoming) and establish data standards that are used across the State agencies. See Appendix B for the initial proposed governance structure.

Finding 10: Many educational and State agency cultures do not support a data and policy driven approach to utilizing data. There will need to be a strong training component to the creation of the P20 SLDS system in order to reinforce its proper use across agencies and organizations.

Finding 13: As long as risks are managed, a P20 SLDS can be constructed for Wyoming with a mitigated impact or investment. Because of the efforts that have already been completed in Wyoming, this work can be done at a more moderate cost scale than would otherwise be possible. Longitudinal data systems are being developed in many states as future-looking legislatures across the country are seeing and addressing this need. There is a wealth of best practice information and forums for sharing intellectual property that Wyoming can utilize to minimize costs and risks.

Finding 16: Many agencies using data do not have dedicated research capabilities and may only use the ID matching, the descriptive analytics, and published reports from the system. In some cases these agencies provide the most compelling argument for the P20 SLDS. The question becomes how a structure is put into place to encourage good research (peer review, etc.) so that people do not draw incorrect and inappropriate conclusions based on the data.

Plan for Addressing Recommendation 5

The need for training has been accounted for in the approved business case for the P20 SLDS. The budget, RFP and future phases of the P20 SLDS all include the training needed to allow for a successful implementation and maintenance of the P20 SLDS. This includes using information from other states that have already done an effective job at developing the training for staff maintaining the system and those that will access the data in the system.

Recommendation 6

Build a set of resources, trainings, on-line help and system designs to ensure that research is done with as complete, accurate and comprehensive of an understanding of the data as possible to reduce inaccurate findings from coming out of the system.

Finding 6: There is no consistency between State agencies in the vocabulary and terms used to describe educational data. Terms like "discipline" and "retention" are used very differently between the Postsecondary and K12 environments.

Finding 8: Recent events in education across the nation (beyond Wyoming) have called into focus the need for independent statistical and analytical capabilities that can surface trends or practices that warrant review and, in some cases, legal intervention. This requires both the organizational capacity (e.g., statisticians with time and resources allocated to this task) as well as the independence of governance structures to perform such analysis even when it goes against the political wind of the agencies.

Finding 10: Many educational and State agency cultures do not support a data and policy driven approach to

utilizing data. There will need to be a strong training component to the creation of the P20 SLDS system in order to reinforce its proper use across agencies and organizations.

Finding 16: Many agencies using data do not have dedicated research capabilities and may only use the ID matching, the descriptive analytics, and published reports from the system. In some cases these agencies provide the most compelling argument for the P20 SLDS. The question becomes how a structure is put into place to encourage good research (peer review, etc.) so that people do not draw incorrect and inappropriate conclusions based on the data.

Plan for Addressing Recommendation 6

A data dictionary has been included in the RFP which will create a common understanding of the terms and data being included in the RFP.

Training and the development of online resources for use of the system will be included throughout the different phases of implementation of the P20 SLDS. These have been included in the RFP and been described in the approved P20 SLDS Business Case.

Recommendation 7

Emphasize a strong communication, roll out, and outreach plan to let users know about the system and how they can use it and how it will benefit them.

Finding 7: The questions in Appendix C of the P20 SLDS Needs Assessment call for governance structures that are empowered to help set policy, define important constructs and terms (such as what is an effective teacher, student success, post-secondary readiness), require additional data to be collected (e.g., cohort data, post-secondary data from higher education institutions beyond Wyoming) and establish data standards that are used across the State agencies. See Appendix B for the initial proposed governance structure.

Finding 9: The types of questions in Appendix C and the types of questions that should be expected in the future of such an SLDS system require an ongoing process within the governance structure for establishing priorities, allocating resources, and tracking progress on responding to information requests. Such capabilities are important to the usefulness of the SLDS.

Finding 10: Many educational and State agency cultures do not support a data and policy driven approach to utilizing data. There will need to be a strong training component to the creation of the P20 SLDS system in order to reinforce its proper use across agencies and organizations.

Finding 15: This project will establish a foundational component of the education system and legislative policy-setting environment for Wyoming and thus will require ongoing funding to allow for its use, usefulness, support, maintenance, continuing training and system operational costs.

Finding 16: Many agencies using data do not have dedicated research capabilities and may only use the ID matching, the descriptive analytics, and published reports from the system. In some cases these agencies provide the most compelling argument for the P20 SLDS. The question becomes how a structure is put into place to encourage good research (peer review, etc.) so that people do not draw incorrect and inappropriate conclusions based on the data.

Plan for Addressing Recommendation 7

Two spokes are being created in reference to a communication plan. The first to ensure the P20 SLDS entities

understand the system, understand how their data is being linked through the system and the security being provided for in the system. It is important to keep these stakeholders informed of the progress of the implementation of the system and recommendations made by the data governance structures. The second spoke is address in the Recommendation 8. An initial communication plan will be drafted by the vendor selected to build the system, P20 SLDS Project Manager and the P20 SLDS Project Director.

Recommendation 8

Create a public outreach and marketing effort to ensure that the system is understood and its existence reaches all possible stakeholders. This not only includes informing the public about the strengths, limitations and safeguards in the system but also how to get to it and how to get more information and support around it.

Finding 9: The types of questions in Appendix C and the types of questions that should be expected in the future of such an SLDS system require an ongoing process within the governance structure for establishing priorities, allocating resources, and tracking progress on responding to information requests. Such capabilities are important to the usefulness of the SLDS.

Finding 10: Many educational and State agency cultures do not support a data and policy driven approach to utilizing data. There will need to be a strong training component to the creation of the P20 SLDS system in order to reinforce its proper use across agencies and organizations.

Finding 15: This project will establish a foundational component of the education system and legislative policy-setting environment for Wyoming and thus will require ongoing funding to allow for its use, usefulness, support, maintenance, continuing training and system operational costs.

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Plan for Addressing Recommendation 8

The second spoke of the communication plan (addressed in Recommendation 7) is to inform both users and the public about the P20 SLDS and how they can use the system to benefit them. An initial communication plan will be drafted by the vendor selected to build the system, P20 SLDS Project Manager and the P20 SLDS Project Director.

Recommendation 9

Begin the P20 SLDS effort as early as possible to produce the result this legislature is looking for, thus the earlier call for a supplemental budget request.

Finding 1: Currently there are limited cross-agency data structures in the learning oriented agencies in the State of Wyoming.

Finding 13: As long as risks are managed, a P20 SLDS can be constructed for Wyoming with a mitigated impact or investment. Because of the efforts that have already been completed in Wyoming, this work can be done at a more moderate cost scale than would otherwise be possible. Longitudinal data systems are being developed in many states as future-looking legislatures across the country are seeing and addressing this need. There is a wealth of best practice information and forums for sharing intellectual property that Wyoming can

utilize to minimize costs and risks.

Finding 14: A key risk with P20 SLDS systems development is continuity. A truly functional SLDS enterprise system requires a foundation to be built and then the tools to be synchronized to that foundation (including new reports to be identified and developed in the future). The legislature should be prepared to hold the course on this kind of project for a few years without interruption or there will be significant risk of wasting the initial investment.

Finding 15: This project will establish a foundational component of the education system and legislative policy-setting environment for Wyoming and thus will require ongoing funding to allow for its use, usefulness, support, maintenance, continuing training and system operational costs.

Plan for Addressing Recommendation 9

The supplemental budget request was prepared and funded $1.3 million during the 2013 legislative session.

The P20 SLDS business case was approved through the IT Governance process. A 2014 budget exception request was submitted to continue the funding for the implementation of the P20 SLDS.

In an effort to ensure all relevant stakeholders are included, the early learning entities have been identified and their systems and needs have been documented and are being included the RFP being drafted.

Recommendation 10

Establish the governance structures for the P20 SLDS with the responsibility to ensure that the system is secure from being politicized and stays focused on serving the citizens of Wyoming and improved student performance.

Finding 10: Many educational and State agency cultures do not support a data and policy driven approach to utilizing data. There will need to be a strong training component to the creation of the P20 SLDS system in order to reinforce its proper use across agencies and organizations.

Plan for Addressing Recommendation 10

The data governance recommendations have been made and are included in the MOU being reviewed by each of the participating P20 entities. Each of the P20 SLDS entities is has been committed to ensuring the success of the entire system.

Recommendation 11

Use existing systems and personnel wherever possible to mitigate the risk of failure, and to reduce the burden on the agencies and other sources of data as much as is feasible.

Finding 2: The Wyoming Department of Education (WDE) has an enterprise-class data and information system that already has some cross-agency hooks and connections. Part of the development effort of the new system would be to expand the scope of the systems to go beyond WDE's current scope and resourcing to include the whole breadth of the State's needs.

Finding 13: As long as risks are managed, a P20 SLDS can be constructed for Wyoming with a mitigated impact or investment. Because of the efforts that have already been completed in Wyoming, this work can be done at a more moderate cost scale than would otherwise be possible. Longitudinal data systems are being developed in many

states as future-looking legislatures across the country are seeing and addressing this need. There is a wealth of best practice information and forums for sharing intellectual property that Wyoming can utilize to minimize costs
and risks.

Finding 14: A key risk with P20 SLDS systems development is continuity. A truly functional SLDS enterprise system requires a foundation to be built and then the tools to be synchronized to that foundation (including new reports to be identified and developed in the future). The legislature should be prepared to hold the course on this kind of project for a few years without interruption or there will be significant risk of wasting the initial investment.

Plan for Addressing Recommendation 11
The system will create the federate login in using the Google technology currently employed by the State.

The ID management system used to link data across the P20 system will also be developed to be scalable to become an enterprise ID management system. This has been included in the RFP that has been drafted.

Recommendation 12
Ensure the Wyoming Community College Commission, University of Wyoming, and ETS maintain the SLDS positions they currently have in addition to whatever other resources are required as the full system is implemented.

Finding 17: This project will require the various organizations to retain the positions they have acquired/are acquiring to maintain and support ongoing SLDS work. There will be an ongoing need for these organizations to understand and be able to review their own data in the context of the whole system.

Plan for Addressing Recommendation 12
These positions are being requested in the 2014 budget requests.

Recommendation 13
Ensure every participating agency allocates sufficient personnel resources to manage the data requests and data uploads required for the P20 system. It is assumed most organizations already have personnel whose function it is to respond to these types of requests and the P20 SLDS will just make their jobs easier. The P20 system will make the employees more efficient and the agencies better informed, but will not eliminate the need for those positions.

Finding 17: This project will require the various organizations to retain the positions they have acquired/are acquiring to maintain and support ongoing SLDS work. There will be an ongoing need for these organizations to understand and be able to review their own data in the context of the whole system.

Plan for Addressing Recommendation 13
The P20 SLDS positions are being requested in the 2014 budget requests. The WCCC has been working with the seven community colleges to develop a data dictionary to help improve community college data and information sharing. Similar benefits will occur when this is completed for the P20 SLDS entities.

Recommendation 14
Coordinate with, and in the case of ID and system interoperability replace the work being done on the WHIN. The WHIN should adopt the P20 ID and eliminate the use of scrambled SSNs.

Finding 11: The Wyoming Health Information Network (WHIN) is a data review network of health and

human services agencies and organizations. It is using scrambled SSN as an ID mechanism and using point-to-point SFTP transfer protocols for data delivery that can be replaced by more modern and secure methods.

Finding 12: There is a tremendous advantage in using the WHIN's approach to linking data. The privacy and HIPAA issues would need to be identified to protect the citizens and families of Wyoming while balancing their privacy with the best provision of services to them.

Plan for Addressing Recommendation 14
The ID management system will likely be built as an enterprise ID management system.

Integration of the Wyoming Health Information Network with components of the P20 SLDS may occur at a later phase.

Recommendation 15
Evolve the Data Governance Task Force (preliminarily described in Appendix B), facilitated by ETS's Education IT Enterprise Architect, into an ongoing governance structure to coordinate and provide guidance on the design and implementation of the system and its ongoing use. It should work with all the other agencies to create a set of policies to support in this collaborative environment. This task force would advise the State Chief Information Officer (CIO), who would propose recommendations to the Governor.

Finding 7: The questions in Appendix C of the P20 SLDS Needs Assessment call for governance structures that are empowered to help set policy, define important constructs and terms (such as what is an effective teacher, student success, post-secondary readiness), require additional data to be collected (e.g., cohort data, post-secondary data from higher education institutions beyond Wyoming) and establish data standards that are used across the State agencies.

Plan for Addressing Recommendation 15
The data governance recommendations have been made and are included in the MOU being reviewed by each of the participating P20 entities. Once approval has been received by the P20 SLDS entities and the State CIO, the P20 SLDS governance structure will be implemented. Until this time, the P20 SLDS Task Force is operating in this capacity.

Recommendation 16
Establish an objective and independent research and statistical analysis capability to be accommodated within the governance structures for the P20 SLDS.

Finding 8: Recent events in education across the nation (beyond Wyoming) have called into focus the need for independent statistical and analytical capabilities that can surface trends or practices that warrant review and, in some cases, legal intervention. This requires both the organizational capacity (e.g., statisticians with time and resources allocated to this task) as well as the independence of governance structures to perform such analysis even when it goes against the political wind of the agencies.

Finding 16: Many agencies using data do not have dedicated research capabilities and may only use the ID matching, the descriptive analytics, and published reports from the system. In some cases these agencies provide the most compelling argument for the P20 SLDS. The question becomes how a structure is put into place to encourage good research (peer review, etc.) so that people do not draw incorrect and inappropriate conclusions based on the data.

Plan for Addressing Recommendation 16

The P20 SLDS Task Force is aware of this need. The process of being able to request data to do research is initially addressed in the MOU with the requirement of establishing a process for requesting data. The P20 SLDS data governance structure will be developing a process for approving data requests based on research needs.

Recommendation 17

Establish a longitudinal identity management system (IDMS) to create, manage and track a P20 ID for every learner and educator in the system. Ensure that only authorized personnel can see both the P20 ID and the relevant Personally Identifiable Information. It is recommended that we leverage and use the already existent Directory/SRS/Foundation system in place in K12 right now.

Finding 2: The Wyoming Department of Education (WDE) has an enterprise-class data and information system that already has some cross-agency hooks and connections. Part of the development effort of the new system would be to expand the scope of the systems to go beyond WDE's current scope and resourcing to include the whole breadth of the State's needs.

Finding 3: There is no common Unique Identifier that exists in Wyoming for learners, educators, employees, and organizations. This was a common theme in our interviews.

Finding 4: A critical issue that was raised is the need for a secure process for the transmission of data and for ensuring data privacy— e.g., who can access the data, how is it transmitted, and at what level of granularity can the data be accessed. This will be one of the fundamental focuses of the design of the system. A key role ETS must play is in protecting the data and the needs of the stewards of the data.

Finding 5: It will be difficult to avoid using Social Security Number (SSN) and other Personal Identifiable Information (PII) in the P20 SLDS system in some way. Workforce, Health, Corrections and Family Services data systems all use SSN as their unique key. The P20 system will need to use SSN and PII as information to match records while preserving such data from being given out. All data leaving the system however can be anonymized.

Plan for Addressing Recommendation 17

This is a system to be developed in the initial phase of the P20 SLDS project. It has been included in the RFP being drafted. The RFP is not requiring the use of WDE's current system since there may be better solutions available. If a vendor wishes to build based on the WDE systems, they can include this in their proposal to the RFP.

The need for an enterprise level ID management system is recognized and is included in the P20 SLDS RFP.

Recommendation 18

Build a centralized data structure to hold the key identity elements and the elements needed for timely and common reporting and create APIs to link to the more fine-grained data held and owned by the data source systems. The key is to minimize the amount of data centralization away from the source.

Finding 2: The Wyoming Department of Education (WDE) has an enterprise-class data and information system that already has some cross-agency hooks and connections. Part of the development effort of the new

system would be to expand the scope of the systems to go beyond WDE's current scope and resourcing to include the whole breadth of the State's needs.

Finding 3: There is no common Unique Identifier that exists in Wyoming for learners, educators, employees, and organizations. This was a common theme in our interviews.

Plan for Addressing Recommendation 18
This information has been included in the architectural design of the P20 SLDS. It has also been designed for data that needs to shared in the P20 system but does not need to be centralized will remain in repositories owned by the individual P20 SLDS entities.

Recommendation 19
No personally identifiable information (PII), or non-aggregated data, should be sent to the Federal government out of this system.

Plan for Addressing Recommendation 19
This requirement has been added into the P20 SLDS MOU.

Recommendation 20
Separate the PII data (including SSN) from the reporting tables and utilize those tables only internally to link records so as to further protect citizen privacy.

Finding 4: A critical issue that was raised is the need for a secure process for the transmission of data and for ensuring data privacy, e.g., who can access the data, how is it transmitted, and at what level of granularity can the data be accessed. This will be one of the fundamental focuses of the design of the system. A key role ETS must play is in protecting the data and the needs of the stewards of the data.

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Plan for Addressing Recommendation 20
This architectural design is recognized and will be implemented in the P20 SLDS.

Recommendation 21
Build a federated, standards-based security, data sharing and navigation infrastructure to provide integrated access to the system.

Finding 4: A critical issue that was raised is the need for a secure process for the transmission of data and for ensuring data privacy, e.g., who can access the data, how is it transmitted, and at what level of granularity can the data be accessed. This will be one of the fundamental focuses of the design of the system. A key role ETS must play is in protecting the data and the needs of the stewards of the data.

Plan for Addressing Recommendation 21
The P20 SLDS RFP is requiring federated identity management services that manage standards-based security and manage organizations, people, and roles. The technologies used for federated logon must utilize the Google

login.

Recommendation 22
The PII and SSN suggestions in this document are based on best practices from around the country and industry-expert validation. The system should continue to follow those recommendations to protect both the stakeholder organizations and the citizens of Wyoming.

> **Finding 4:** A critical issue that was raised is the need for a secure process for the transmission of data and for ensuring data privacy, e.g., who can access the data, how is it transmitted, and at what level of granularity can the data be accessed. This will be one of the fundamental focuses of the design of the system. A key role ETS must play is in protecting the data and the needs of the stewards of the data.
>
> **Finding 13:** As long as risks are managed, a P20 SLDS can be constructed for Wyoming with a mitigated impact or investment. Because of the efforts that have already been completed in Wyoming, this work can be done at a more moderate cost scale than would otherwise be possible. Longitudinal data systems are being developed in many states as future-looking legislatures across the country are seeing and addressing this need. There is a wealth of best practice information and forums for sharing intellectual property that Wyoming can utilize to minimize costs and risks.
>
> **Plan for Addressing Recommendation 22**
> The PII and SSN suggestions from the P20 SLDS Needs Assessment have been incorporated into the requirements described in the P20 SLDS RFP.

Recommendation 23
Plan for a five year-budget including two to three years of implementation and rollout in phases followed by support and maintenance. Based on examination of other successful and failed state SLDS projects, and to ensure all the agencies participating have the resources needed to participate fully, the budget will be in the range of $15,000,000 over five years.

> **Finding 13:** As long as risks are managed, a P20 SLDS can be constructed for Wyoming with a mitigated impact or investment. Because of the efforts that have already been completed in Wyoming, this work can be done at a more moderate cost scale than would otherwise be possible. Longitudinal data systems are being developed in many states as future-looking legislatures across the country are seeing and addressing this need. There is a wealth of best practice information and forums for sharing intellectual property that Wyoming can utilize to minimize costs and risks.
>
> **Finding 14:** A key risk with P20 SLDS systems development is continuity. A truly functional SLDS enterprise system requires a foundation to be built and then the tools to be synchronized to that foundation (including new reports to be identified and developed in the future). The legislature should be prepared to hold the course on this kind of project for a few years without interruption or there will be significant risk of wasting the initial investment.
>
> **Finding 15:** This project will establish a foundational component of the education system and legislative policy-setting environment for Wyoming and thus will require ongoing funding to allow for its use, usefulness, support, maintenance, continuing training and system operational costs.
>
> **Finding 17:** This project will require the various organizations to retain the positions they have acquired/are acquiring to maintain and support ongoing SLDS work. There will be an ongoing need for these organizations

to understand and be able to review their own data in the context of the whole system.

Plan for Addressing Recommendation 23

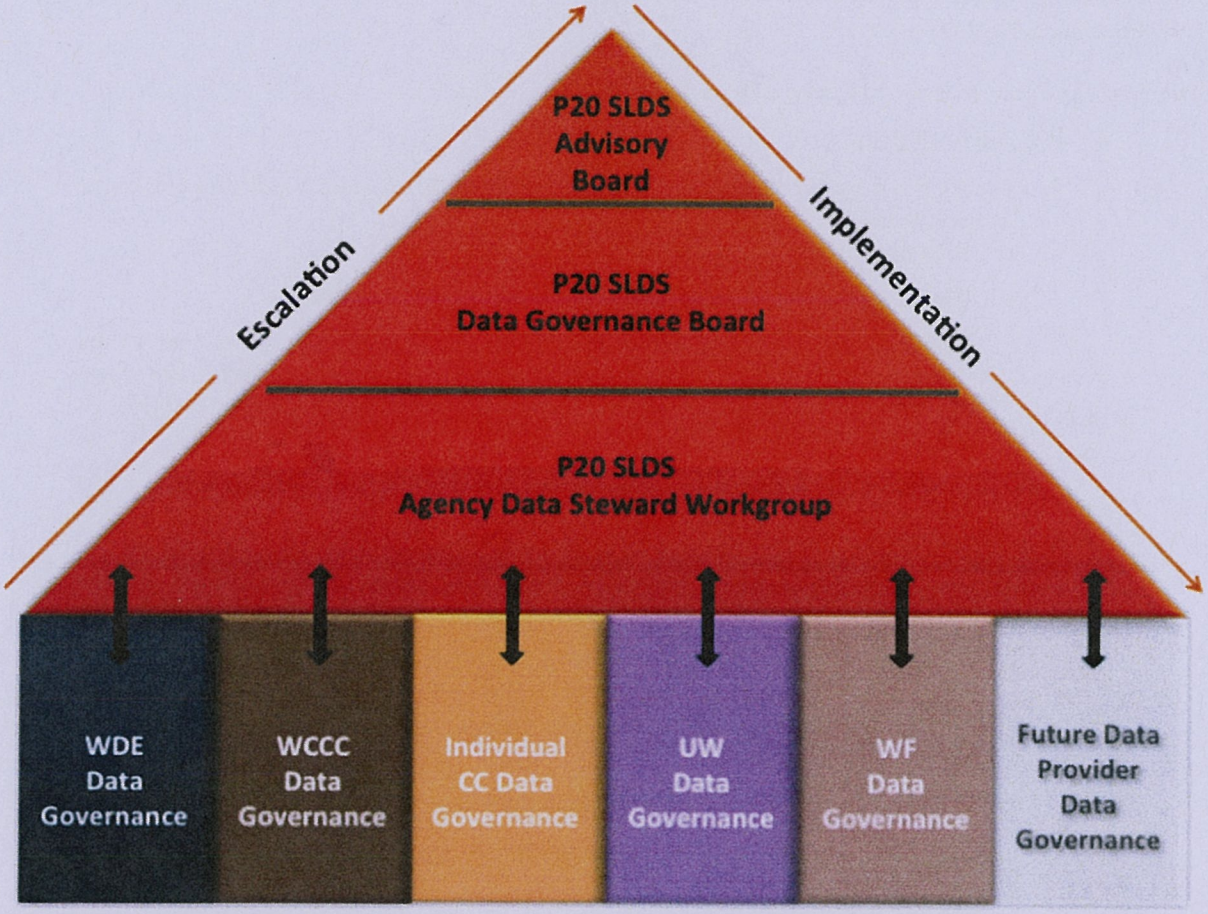
The budget is being requested through the biennium budget and will match the planned phased implementation. This can be seen in on pages 9-12 of the P20 SLDS business case that was approved through the IT Governance Committees. P20 SLDS Business Case - http://goo.gl/xwdzC7

All P20 SLDS funded staff have been requested in the upcoming biennium budget requests.

DRAFT - P20 Statewide Longitudinal Data System Governance Structure

Figure 1 provides a visual representation of the P20 Statewide Longitudinal Data System (SLDS).

Figure 1



The P20 SLDS Data Governance Body establishes procedures regarding the gathering, reviewing and granting of access to the data shared with the P20 SLDS.

The identification and release of data from participating entities will be at the discretion and authority of each entity and must be done in compliance with existing Statutes, State and Federal. It is not the intention of the Data Governance Body to supersede the authority of the data owners in any way.

The Data Governance Body provides advice and counsel to the State Chief Information Officer (CIO) and the Governor in the setting of general direction and application of P20 SLDS data and resources. While the State CIO and the Governor have final responsibility for establishing P20 SLDS

policies, the State CIO will make every reasonable effort to accommodate the recommendations of the the Data Governance Body.

The Data Governance Body will be comprised of representatives of the parties providing data into the P20 SLDS as well as appointees from the Wyoming Office of the Governor, Wyoming School Board Association, Wyoming Superintendent's Association and Wyoming Education Coordinating Council and Wyoming School Districts.

The Data Governance Body has three different components:

A. P20 Advisory Board

1. The scope of responsibilities for the P20 Advisory Board includes all data combined in the P20 SLDS system.
   a. Ensuring continued commitment of resources
   b. Providing vision and direction for the Data Governance Board
   c. Receives and reviews recommendations and questions from the Data Governance Board. Issues and concerns are escalated from the Data Governance Board for review and recommendations are made to the Office of the Chief Information Officer.

B. Data Governance Board

1. The scope of responsibilities for the Data Governance Board includes all data combined in the P20 SLDS system.
   a. Ensuring privacy and confidentiality of data, to include FERPA and HIPPA and recommend policies around Personally Identifiable Information (PII). These should include, at a minimum, those policies already set by the participating agencies and institutions
   b. Develop and recommend data retention policies
   c. Adjudicate approved data retention policies
   d. Create scope and process around data ownership, including any liability issues
   e. Developing and implementing a research plan to incorporate the interests of all constituents
   f. Identify appropriate policy questions the system should be capable of answering
   g. Set priority of data requests
   h. Recommend policy for handling of data requests
   i. Provide input into information contained in Memorandum of Understanding (MOUs)
   j. Recommend change management and dispute resolution policies
   k. Make recommendations to P20 Advisory Board, such as legislative changes and new members to Data Governance Board

l. Address issues, questions and recommendations from Agency Data Steward Working Group and/or referring policy issues with recommendations to the P20 Advisory Board

m. Develop recommendations for data access and use policies

n. Enforce approved data access and use policies

o. Ensure approved data governance policies are being followed

C. Agency Data Steward Working Group

1. The scope of responsibilities for the Agency Data Steward Working Group includes all data combined in the P20 SLDS system.

a. Identifying the system of record for required data inclusion

b. Develop and monitor P20 SLDS data definitions

c. Regularly evaluate the quality of the data going into the P20 SLDS, including raw data set reviews, aggregate data set reviews and report reviews

d. Manage small cell rules, permission matrices and role descriptions for the P20 SLDS technical team

e. Report design and validation with the P20 SLDS technical team

f. Identifying opportunities to share and re-use data in accordance with policies implemented by the Data Governance Board

g. Manage tactical access questions, PII agreements and sandboxes between agencies

h. Providing Data Governance Board with recommendations (e.g., data security, infrastructure, metadata, ETL, etc.)

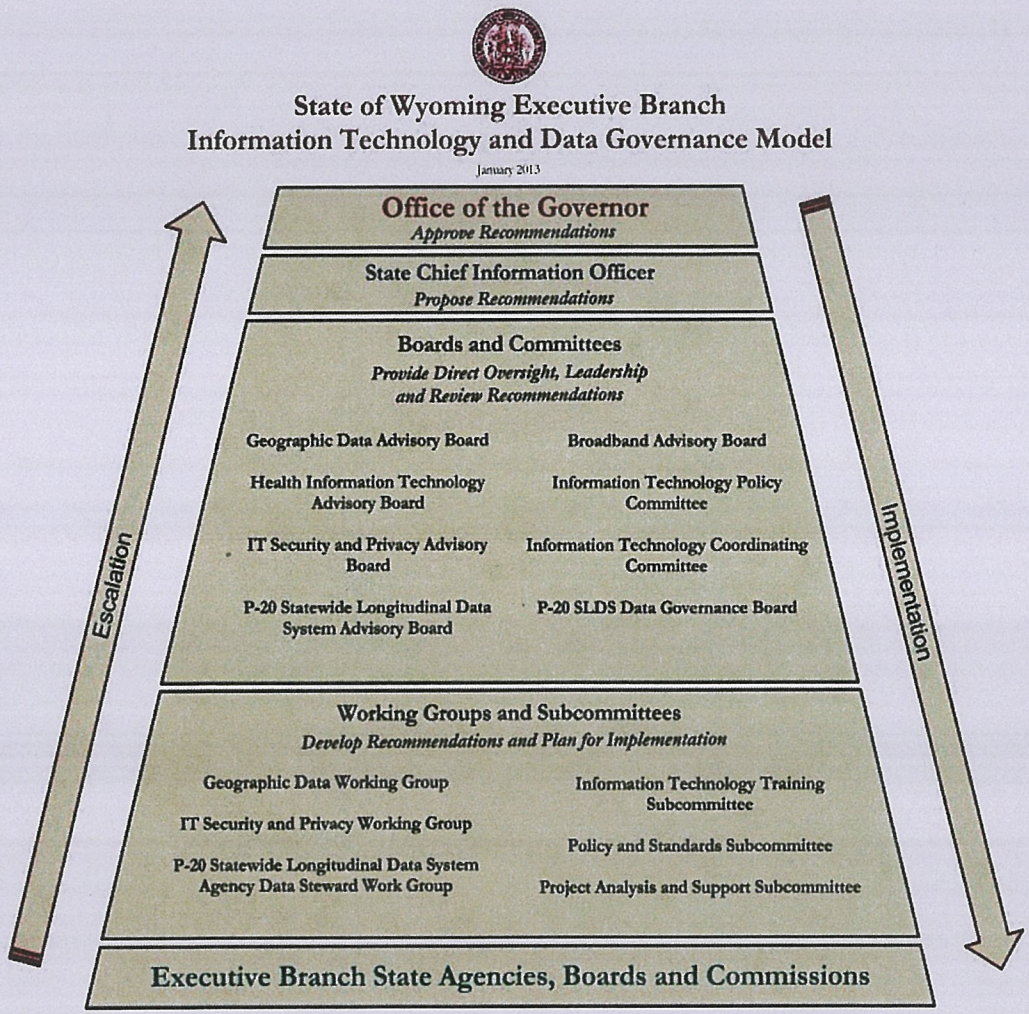
i. Manage correction process and notifications regarding dispute resolution and change management

j. Tracking federal and state legislation involving data elements and translate this impact for the P20 SLDS

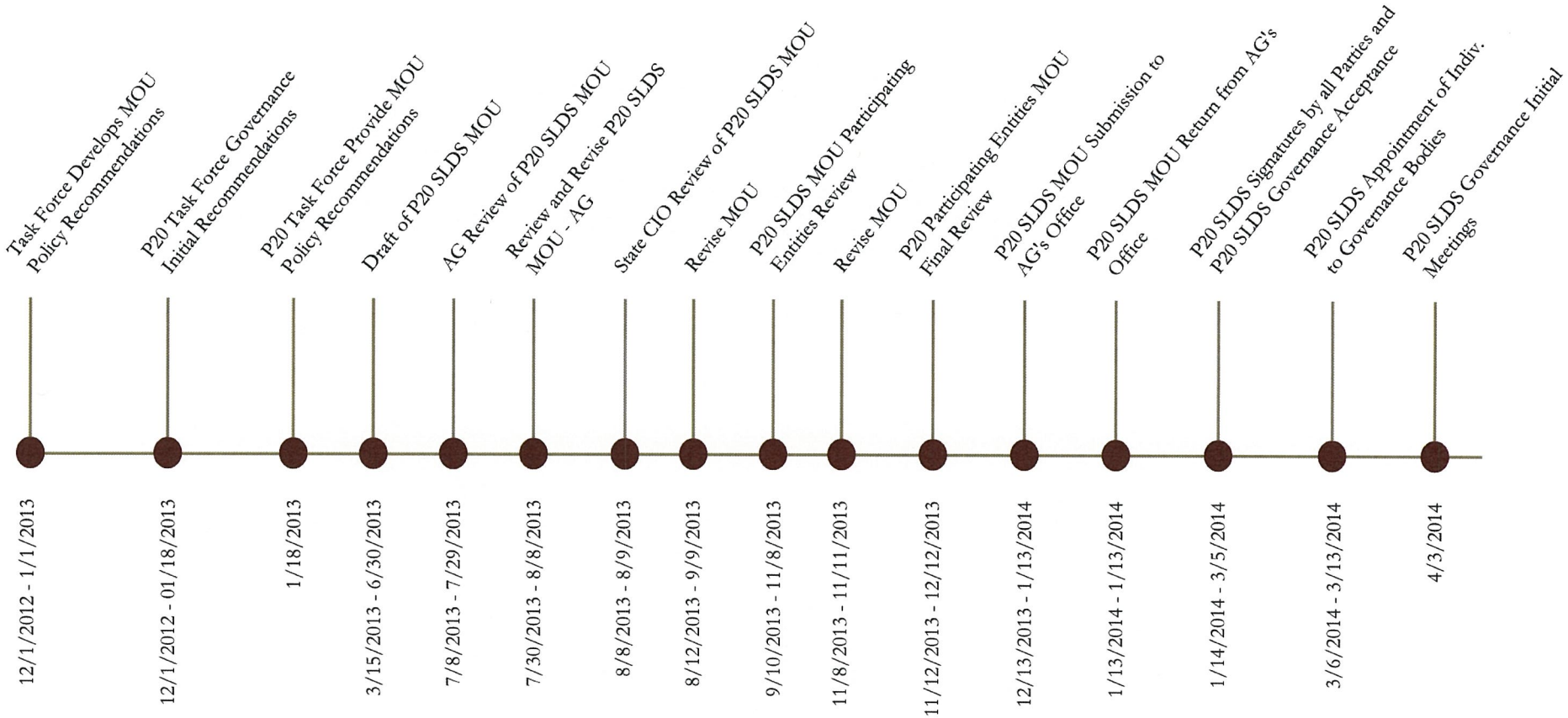
DRAFT - P20 Statewide Longitudinal Data System Governance Structure

Figure 2 provides information on how the P20 SLDSData governance structure fits into the executive branch's system of information technology and data governance.

Figure 2



P20 Statewide Longitudinal Data System MOU and Governance Timeline



Department of Enterprise Technology Services

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